

REMARKS

Favorable reconsideration of this application is respectfully requested in light of the following discussion.

After entry of the foregoing amendment, Claims 1 and 11-18 are pending in the present application. Claims 1, 14, and 18 are amended by the present amendment without introduction of new matter. Since no new issues are presented<sup>1</sup> and the amendment will present Applicants' position in a better form for appeal, it is respectfully requested that the Examiner enter the response on the record.

In the outstanding Office Action, Claims 1 and 11-18 were rejected under 35 U.S.C. 103(a) as unpatentable over U.S. Patent No. 6,487,392 to Sonetaka in view of U.S. Patent No. 5,493,436 to Karasawa et al. (hereinafter "Karasawa"). That rejection is respectfully traversed.

Amended Claim 1 is directed to a central control station of a mobile communication system with radio base stations. The central control station controls the radio base stations and is connected to an upper-level station connected to the central control station. The central control station includes:

a demultiplexing unit which demultiplexes a signal supplied from the upper-level station to generate a plurality of sequences of signals, and multiplexes a plurality of sequences of signals received from the base stations into a single signal for transmission to the upper level station;

signal conversion units which are coupled to said demultiplexing unit and convert the respective demultiplexed sequences of signals into converted signals of a common transmission format, *the common transmission format enabling compatibility between radio links and optical fiber links*;

radio signal transmitting and receiving units and optical signal transmitting and receiving units which transmit and receive signals via the

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<sup>1</sup> The present response addresses the feature of a common transmission format that enables compatibility between radio links and optical fiber links. This feature was previously introduced by at least independent Claims 14 and 18.

radio links and the optical fiber links, said radio links and said optical fiber links provided for connection with the base stations; and

a distribution unit which is provided between said signal conversion units and units of said radio signal transmitting and receiving units and said optical signal transmitting and receiving units, and provides a communication connection for sending the converted signals having the common transmission format between a predetermined one of the base stations and the upper-level station.

As emphasized, amended independent Claim 1 recites the feature of a common transmission format that enables compatibility between radio links and optical fiber links. Independent Claims 14 and 18 recite a similar common transmission format. Independent Claims 11-13 and 15-17 depend from independent Claims 1 and 14, respectively.

By way of background, as explained with reference to Figure 10 of the present application, when the communication links between a conventional central control station 30 and corresponding radio base stations 31, 32, 34 are both radio and optical links, signal converters cannot be shared amongst the communication links because of their different signal transmission formats.<sup>2</sup> The claimed invention, on the other hand, provides a central control station that harmonizes the transmission formats for radio and optical communication links.<sup>3</sup>

In a non-limiting example, Figure 1 of the present application illustrates an embodiment of the claimed invention. In the embodiment, optically transmitted signals have a signal format that is not the format of ordinary digital signals, but are transmitted through an intermediate frequency band that is used for radio communication. By converting the demultiplexed signals into signals having a common or “unified format”, transceivers and signal conversion units of the control unit may be shared amongst the radio and optical links.<sup>4</sup> Further, because the distribution unit distributes signals of a common transmission format,

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<sup>2</sup> Specification, page 4, lines 7-11.

<sup>3</sup> Specification, page 5, lines 23-30.

<sup>4</sup> Specification, page 5, lines 19-30.

the distribution unit can more efficiently switch between communication links, and thereby more quickly account for changes in signal traffic.<sup>5</sup>

Sonetaka discloses a base control station that transmits and receives signals via radio and optical links. However, the reference does not address the use of a common transmission format which enables compatibility between radio and optical fiber communication links. Accordingly, as noted by the outstanding Office Action, Sonetaka does not teach a demultiplexing unit which demultiplexes signals into a single signal for transmission; and does not teach signal conversion units which convert demultiplexed sequences into converted signals which have a unified transmission format. Thus, Sonetaka clearly does not teach (and is not relied upon as teaching) the claimed common transmission format.

Karasawa discloses that it is well known in the art to convert demultiplexed signals to a unified format. However, Karasawa does not disclose the conversion of demultiplexed signals to a common transmission format, as recited by Applicants' Claim 1. In fact, Karasawa is neither directed to the use of a common transmission format, nor mentions the use of common transmission formats. Rather, Karasawa merely teaches the conversion of a first plurality of same-type signals to a second plurality of same-type signals, e.g., conversion of three S0-type signals to three S1-type signals.<sup>6</sup> In order to teach a "common transmission format", <sup>7</sup> Karasawa must disclose the conversion of two different transmission formats into a single transmission format, e.g., compatible with both radio and optical fiber links. Karasawa does not teach the conversion of two transmission formats into a common transmission format.

Further, Sonetaka and Karasawa are devoid of any suggestion that radio and optical transmission formats should be unified to a single transmission format. The Office Action

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<sup>5</sup> Specification, page 6, lines 25-28.

<sup>6</sup> Karasawa, Figure 4.

<sup>7</sup> "[A]ll words in a claim must be considered in judging the patentability of that claim against the prior art." In re Wilson, 165 USPQ 494, 496 (CCPA 1970).

concludes that one skilled in the art would nonetheless have been motivated to convert radio and optical signals of Sonetaka and Karasawa to a common transmission format in order to distribute those signals to a plurality of base stations, without regard for the transmission medium. Respectfully, as neither Sonetaka nor Karasawa even addresses the unification of transmission formats to a common transmission format, the above conclusion appears to be drawn in hindsight from Applicants' disclosure. It is well established that the PTO must present a supporting factual basis for rejections and cannot "resort to speculation or unfounded assumption hindsight reconstruction as a substitute for the required showing of facts".<sup>8</sup>

Accordingly, for the reasons stated above, Applicants respectfully request that the rejection of Claims 1 and 11-18, under 35 U.S.C. § 103(a) as unpatentable over Sonetaka in view of Karasawa, be withdrawn. In the event that the above distinctions are not found persuasive, Applicants respectfully request the Examiner to expressly rebut those arguments in an Advisory Action, in order to facilitate the resolution of the outstanding issues on appeal.


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<sup>8</sup> In re Warner, 159 USPQ 173, 178 (CCPA 1967).

Consequently, in light of the above discussion and in view of the present amendment, the present application is believed to be in condition for allowance, and an early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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